

**Contractor's Progress Report
(Technical and Financial)
CDRL A001**

For: Safe Surgery Trainer

Prime Contract: N00014-14-C-0066

For the Period Dec1, 2014 to Dec 31, 2014

Submitted: 19 February 2015 (see note section 6)**

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Medical Modeling - Safe Surgery Trainer

This Monthly Progress Report is provided in accordance with the contract CDRL.

1) Contract Period of Performance: 12 March, 2014 to 30 September, 2015

2) Cost (Estimated financials may differ from actual invoice)

a) Total Amount Funded to date:	\$910,256.00
b) Estimated Reporting Period Expenditures	\$132,735.72
c) Estimated Cumulative Expenditure	\$514,006.04
d) Estimated Remaining Funds To Completion	\$396,249.96

3) Progress and Accomplishments During Report Period

- a) Program Management – Ongoing communication and project management with project team and sub-contractors. Ongoing outreach with medical centers (see below). Ongoing project management according to Alion's CMMI Level 3 processes.
 - i) Coordinated and conducted I/ITSEC field study. See Research Studies below. Managed IRB protocols - established, approved, and followed.
 - ii) Continued coordinating of technology transfer, surgical visitation, and study participation.
 - iii) Ongoing interactions with medical representatives that were interested in or attended the SST StoryJam. StoryJam Participating organizations included: Portsmouth Naval Hospital, Langley AFB Hospital, Fort Eustis McDonald Healthcare, Eastern Virginia Medical School, Maryview Hospital, Mary Immaculate Hospital, and the Children's Hospital of the King's Daughters.
 - iv) Continued outreach to the VA, Navy, Army, Airforce, and civilian healthcare organizations to encourage participation and alignment.
- b) Prototype Development – Finalization of Iteration One in preparation for field study at I/ITSEC. Preparation, travel, and setup/support of the I/ITSEC demo. Post I/ITSEC, the team continued work to identify areas for improvement and begin preparation for Iteration 2, including work on the missions, environmental art, and user interface.
- c) Instructional Design and Healthcare Research – Finalized development and refinement of first three scenarios to ensure gameplay and conversations match the learning objectives in preparation for the I/ITSEC study. Created first draft of scenario four involving detailed timelines, character interaction, and plot chronology. Continued reviewing and updating the terminal and enabling Learning Objectives (see below). Reviewed research and videos.
 - i) Learning Objectives:

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- (1) Facilitate Psychological Safety;
- (2) Conduct an Effective Timeout;
- d) Research Studies – Finalized study plan, metrics, and questionnaire for I/ITSEC Field Study. Conducted I/ITSEC field study from the Alion booth on the conference expo floor. Began analyzing results. This included the first three scenarios of the Safe Surgery Trainer and involved 181 participants. Summary data showed a 25% improvement in performance between the control group (no game) and the test group (game). Created/refined measurement outlines for usability studies, evaluation study, closed loop communication, and timeout. Continued plans for IRB approval and shifted IRB date to March for May testing. Participated in design and development discussions to ensure research and development goals are aligned.

4) Work in Progress / Plans for Next Month

- a) Program Management - Continue identifying communication channels, managing contracts, and coordinating with team members and outside participants. Continue involving team members and stakeholders in design, testing, and development.
- b) Prototype Development – Continue developing SST software, game-flow, and mechanics. Continue developing art assets including 2D, 3D environmental, and character avatars. Continue building infrastructure, user-interface, and scenario tools. Continue Iteration Two.
- c) Instructional Design and Healthcare Research – Continue developing/refining target scenarios and conversations. Continue refining the scenario's characters, backstory, and scenario. Continue refining the Learning Objectives.
- d) Research Studies – Support learning objective refinements with measurement outlines. Refine results from I/ITSEC field study and present at IMSH. Coordinate with Portsmouth Naval regarding IRB. Continue participation in discussions to ensure design, development, and research goals are in alignment (ex. psychological safety).

5) Milestones / Deliverables

Name/Description	Date (Target or Actual)	Notes/Status
Project Management Plan	DONE: May 28, 2014	COMPLETE
Reports	15 th of each month	This document
Presentation Materials	As appropriate	ONR Kickoff Brief
Software Requirements Document	Target: Nov 30, 2014	
Scenario Design Document	Target: Sept 30, 2014 & June 30, 2015	
Prototype - Executable	Target: December, 2014, May, 2015, and Aug, 2015	Iter 1 – COMPLETE 12/1/14 Iter 2 – Target Apr 30, 2015 Iter 3 – Target July 31, 2015
Prototype - Source	Target: Sept 30, 2015	
Research Data	Target: Sept 30, 2015	

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Final Report	Target: Sept 30, 2015	
Milestone – Initiation	DONE: May 31, 2014	COMPLETE
Milestone – Iteration 1	DONE: Dec 1, 2014	COMPLETE
Milestone – Iteration 2	Target: Apr 30, 2015	
Milestone – Iteration 3	Target: July 31, 2015	
Milestone – Conclusion	Target: Sept 30, 2015	
Milestone – ONR Kickoff	DONE: Apr 22, 2014	COMPLETE
Milestone – StoryJam	DONE: May 25, 2014	COMPLETE

6) Risks/Issues/Concerns/Problems

- a) Still need a transition agreement or memorandum with Portsmouth Naval Hospital. Working with new XO, Capt Smith. Will also begin work to brief/update the new CO, Capt Vai. (Note – see October report for more detailed analysis of previous risk)
- b) *** Delivery of monthly and quarterly reports delayed temporarily due to death of child by the principle investigator – approved by government sponsor. Long term impact to master schedule is not expected.

7) Travel Accomplished

- a) I/ITSEC, Dec 1 – Dec 4, Orlando Florida. Included labor hours for onsite SST effort such as conducting the field study. No actual travel budget.
- b) IMSH, Jan 12-14, New Orleans, Louisiana. Includes labor hours for onsite SST demonstrations and meetings. No actual travel budget.

8) Planned Travel

- a) None.

9) Related Activities

- a) Presented talk at the International Modelling and Simulation in Healthcare (IMSH) 2015 conference, New Orleans, Louisiana, Jan 10-14, 2015. “Safer Surgery with Games – The Moment of Truth”
- b) Presented at the Design of Learning Games Community Workshop, at I/ITSEC, Wednesday, Dec 3rd.
- c) Conduct Field Study from the Alion booth at I/ITSEC – only such study of the conference!
- d) Presented SST concepts in a brief at the M&S Southwest Modeling and Simulation Conference in Scottsdale, Arizona, Mar 12, 2014.